REMARKS

Claims 42-51 are pending and under consideration in the above-identified application.

In the Office Action, Claims 42-51 were rejected.

In this Amendment, Claims 42 – 44, 46, 49, and 50 are amended. No new matter has been introduced as a result of this Amendment.

Accordingly, Claims 42 - 51 remain at issue.

I. 35 U.S.C. § 112 1st Paragraph Indefiniteness Rejection of Claims

Claims 42-51 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Applicants have appropriately amended Claim 42 so as to recite "said high molecular material comprises a molecular weight greater than about 10,000 and less than about 1,000,000." This Amendment finds support in the Specification, namely on page 6, lines 2 – 4. Moreover, Claims 43, 44, 46, 49, and 50 have been similarly amended by substituting the wording "polymer" with the phrasing "high molecular material."

Further, Claim 42 was rejected because of the requirement of "contacting without a pretreatment for mixing or dispersing the agent in liquid." Applicants respectfully traverse this rejection. The first limitation of Claim 42 recites "providing a cleansing processing agent in a solid state." Further, as supported by the specification, Claim 42 also recites that the high molecular material is present in pieces not larger than 3.5 mesh. In addition, the specification discloses that "If the size is larger that this value, the reactant surface area is reduced to render chemical processing difficult to lead to protracted reaction time. Moreover, the performance as the waste material processing agent (ionic absorptive performance) is significantly lowered." Further, in the disclosed method of using the cleansing processing agent (see pages 14 – 16 of the specification), this agent is (1) added to a plant effluent water containing harmful heavy metals, (2) added to a land filling site, (3) mixed at the outset in a molding material, such as metal, plastics, wood, paper, glass or a compound material thereof, and so forth.

As such, one skilled in the art would conclude that the claimed cleansing processing agent is provided in a solid state without a pretreatment for mixing or dispersing the agent in liquid prior to bringing the claimed cleansing processing in contact with a material to be cleaned.

In regard to the rejection that the hydrolyzed polymer is not presented in pieces not larger than 3.5 mesh, Applicants submit that amended Claim 42 recites that a high molecular material present in pieces not larger than 3.5 mesh, which is supported by the specification.

Accordingly, Applicants respectfully request that the claim rejections be withdrawn.

II. 35 U.S.C. § 112 2nd Paragraph Indefiniteness Rejection of Claims

Claims 42-51 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As stated above, Applicants have appropriately amended Claim 42 by substituting the wording "polymer" with the phrasing "high molecular material."

Accordingly, Applicants respectfully request that the claim rejections be withdrawn.

III. 35 U.S.C. § 103 Obviousness Rejection of Claims

Claims 42-51 were rejected under 35 U.S.C. § 103(a) as being unpatentable over any one of EP 0818474, EP 0818420 and Inagaki et al in view of DE 4444032, Elfine, Monick et al, Horton and Ramirez et al.

Claim 42 is directed to a cleansing method, which comprises the steps of providing a cleansing processing agent in a solid state, contacting the agent with a material to be cleaned without a pre-treatment for mixing or dispersing said agent in a liquid, the material to be cleaned containing at least one of a heavy metal, ammonia, and amine compound, and absorbing the at least one of a heavy metal, ammonia, and an amine compound from the material to be cleaned.

Amended Claim 42 recites "contacting said agent with a material to be cleaned without a pre-treatment for mixing or dispersing said agent in a liquid, the material to be cleaned containing at least one of a heavy metal, ammonia, and amine compound." This amendment finds support in the disclosure, e.g. on page 14 lines 11 – 13, and page 17, lines 15 – 19. That is, the claimed processing agent provided in solid state is not mixed or dispersed in a liquid prior to contacting a material to be cleaned.

EP 0818474, EP 0818420 and Inagaki et al teach a method of obtaining polyelectrolytes and of the use of the obtained polyelectrolytes as absorbing agent in different processes. However, the obtained polyelectrolytes are obtained and used in a solution state to interact with a material to be cleaned. See text and examples provided in all of these three cited references. Moreover, DE 4444032, Elfine, Monick et al, Horton and Ramirez et al. are concerned mainly with the use of polyelectrolytes to remove heavy metals and ammonia from different liquids and solids. Thus, none of the cited references, either singly or in combination with each other, teach or suggest providing the agent in solid state and contacting the agent with a material to be cleaned without a pre-treatment for mixing or dispersing said agent in a liquid.

Thus, the cited references may not properly be combined to reject Claim 42.

Moreover, Claim 42 recites that the cleansing processing agent comprises a high molecular material having an acrylonitrile unit, a unit selected from the group consisting of styrene, conjugated diene, and a combination thereof, hydrophilic groups introduced into said acrylonitrile unit by adding an acid or an alkali thereto, and ion groups being introduced into said acrylonitrile unit and said unit selected from the group consisting of styrene, conjugated diene, and a combination thereof.

Thus, the cleansing processing agent includes a combination of ion groups, such as sulfate, and hydrophilic groups, such as amide, or carboxylic acid groups obtained by hydrolysis of acrylonitrile groups, such as acid and alkali agents. The hydrophilic groups contribute to improving hydrophilicity with respect to water and exhaust gas.

In contrast, none of the cited references, either singly or in combination with each other, teach or disclose a cleansing agent that contains an acrylonitrile unit and hydrophilic groups.

Thus, for at least the above discussed reasons, the cited references may not properly be combined to reject Claim 42.

Accordingly, Claim 42 is patentable over the cited references, taken singly or in combination, as are dependent Claims 43 – 51 for at least the same reasons.

IV. Conclusion

In view of the above amendments and remarks, Applicant submits that Claims 42 – 51 are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

Respectfully submitted,

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